

CLAIMS

1. A silicone composition for the treatment of fibrous material, which composition can be crosslinked  
5 into an elastomer, comprising:

(a) at least one polyorganosiloxane (POS) having, per molecule, at least two alkenyl, preferably C<sub>2</sub>-C<sub>6</sub>, groups linked to the silicon;

(b) at least one polyorganosiloxane having, per  
10 molecule, at least three hydrogen atoms linked to the silicon;

(c) a catalytically effective quantity of at least one catalyst, preferably composed of at least one metal belonging to the platinum group;

15 (d) optionally, at least one adhesion promoter;

(e) optionally, a mineral filler;

(f) optionally, at least one crosslinking inhibitor;

(g) optionally, at least one polyorganosiloxane  
20 resin; and

(h) optionally, functional additives in order to impart specific properties;  
characterized in that:

→ it has a dynamic viscosity of between 1000 and  
25 7000 mPa.s at 25°C and more preferably between 2000 and 5000 mPa.s at 25°C before crosslinking; and

→ it has, after complete crosslinking by curing in a fan oven for 30 minutes at 150°C, at least one of the following mechanical properties:

30 - a Shore A hardness of at least two, preferably between 5 and 65,

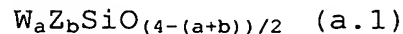
- a tensile strength of at least 0.5 N.mm<sup>-1</sup>, preferably at least 1.0 N.mm<sup>-1</sup> and more preferably at least 2 N.mm<sup>-1</sup> and

35 - an elongation at break of at least 50%, preferably at least 100% and more preferably at least 200%.

2. The composition as claimed in claim 1, characterized in that it is fluid, and obtained without either diluting or dissolving or emulsifying it, and in that it is capable of impregnating a fibrous material right to the core and then of crosslinking.

3. The composition as claimed in claim 1 or 2, characterized in that it is capable of impregnating a fibrous material right to the core and then of crosslinking so as to form a composite having a capillary rise of less than 20 mm, preferably less than 10 mm and more preferably still equal to 0, the capillary rise being measured according to a T test.

4. The composition as claimed in any one of claims 1 to 3, characterized in that the polyorganosiloxane (a) chosen has units of formula:



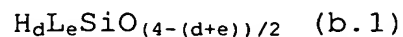
in which:

- W is an alkenyl group;
- Z is a monovalent hydrocarbon group, which has no unfavorable effect on the activity of the catalyst and chosen from alkyl groups having from 1 to 8 carbon atoms inclusive, optionally substituted with at least one halogen atom, and from aryl groups;
- a is 1 or 2, b is 0, 1 or 2 and a + b is between 1 and 3; and
- optionally, at least one portion of the other units are units of average formula:



in which W has the same meaning as above and c has a value between 0 and 3.

5. The composition as claimed in any one of claims 1 to 4, characterized in that the polyorganosiloxane (b) contains siloxyl units of formula:



in which:

- L is a monovalent hydrocarbon group, which has

no unfavorable effect on the activity of the catalyst and chosen from alkyl groups having from 1 to 8 carbon atoms inclusive, optionally substituted with at least one halogen atom, and from aryl groups;

5       - d is 1 or 2, e is 0, 1 or 2 and d + e has a value between 1 and 3;

- optionally, at least one portion of the other units being units of average formula:

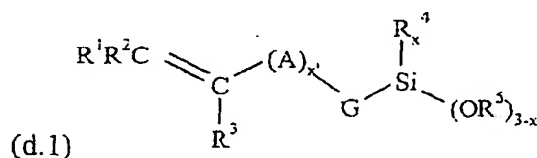


10       in which L has the same meaning as above and g has a value between 0 and 3.

6.       The composition as claimed in any one of claims 1 to 5, characterized in that the proportions of  
15       (a) and of (b) are such that the molar ratio of the hydrogen atoms linked to the silicon in (b) to the alkenyl radicals linked to the silicon in (a) is between 0.4 and 10.

20       7.       The composition as claimed in any one of claims 1 to 6, in which the adhesion promoter comprises:

(d.1) at least one alkoxyated organosilane satisfying the following general formula:



25

in which:

-  $R^1$ ,  $R^2$ ,  $R^3$  are hydrogenated or hydrocarbon radicals, which are the same or differ from one another and represent hydrogen, a  $C_1$ - $C_4$  linear branched alkyl or  
30       a phenyl optionally substituted with at least one  $C_1$ - $C_3$  alkyl;

- A is a  $C_1$ - $C_4$  linear or branched alkylene;

- G is a valency bond;

-  $R^4$  and  $R^5$  are radicals, which are identical or

different and represent a linear or branched C<sub>1</sub>-C<sub>4</sub> alkyl;

- x' = 0 or 1; and

- x = 0 to 2,

5 said compound (d.1) being preferably vinyltrimethoxysilane (VTMS);

(d.2) at least one organosilicon compound comprising at least one epoxy radical, said compound (d.2) being preferably 3-glycidoxypropyltrimethoxysilane (GLYMO);

10 and

(d.3) at least one metal M chelate and/or a metal alkoxide of general formula M(OJ)<sub>n</sub>, where n = valency of M and J = C<sub>1</sub>-C<sub>8</sub> linear or branched alkyl, M being chosen from the group formed by: Ti, Zr, Ge, Li, Mn,

15 Fe, Al and Mg,

said compound (d.3) preferably being tert-butyl titanate.

8. The composition as claimed in any one of  
20 claims 1 to 7, in which the adhesion promoter is present in an amount of 0.1 to 10% by weight relative to all of the constituents.

9. A two-component precursor system for the liquid  
25 silicone composition as claimed in any one of claims 1 to 8, characterized in that:

- it is in two separate parts A and B that are intended to be mixed together to form the composition, and in that one of these parts A and B contains the  
30 catalyst (c) and only one polyorganosiloxane species (a) or (b); and

- part A or B containing the polyorganosiloxane (b) contains no compound (d.3) of the promoter (d).

35 10. The use of a composition as claimed in one of claims 1 to 8 or of a system as claimed in claim 9 for impregnating a fibrous support, excluding any architectural textile.

11. A composite characterized in that it comprises at least one fibrous support, excluding any architectural textile, impregnated to the core with a crosslinked silicone elastomer obtained from the composition as claimed in any one of claims 1 to 8 or from a system as claimed in claim 9.

12. The composite as claimed in claim 11, characterized in that a capillary rise of less than 20 mm, preferably less than 10 mm and more preferably still equal to 0, the capillary rise being measured according to a T test.